

CLAIMS

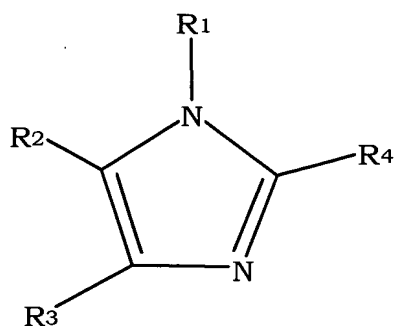
1. A metal-coated resin molded article comprising a substrate made of a resin composition and a metal layer formed on said substrate, wherein said resin
5 composition comprises a liquid-crystalline polyester and an epoxy-group containing ethylene copolymer,

said epoxy-group containing ethylene copolymer contains 50 to 99.9 wt% of an ethylene unit and 0.1 to 30 wt% of at least one of an unsaturated carboxylic acid glycidyl ester unit and an unsaturated glycidyl ether unit in the molecule
10 thereof, and

a content of said epoxy-group containing ethylene copolymer is in a range of 0.1 to 25 parts by weight with respect to 100 parts by weight of said liquid-crystalline polyester.

15 2. The metal-coated resin molded article as set forth in claim 1, wherein said liquid-crystalline polyester is a reaction product obtained by an ester-exchange and polycondensation reaction of at least one of an aromatic dicarboxylic acid and an aromatic hydroxycarboxylic acid with an acylated compound obtained
20 by acylating a phenolic hydroxyl group of at least one of an aromatic diol and an aromatic hydroxycarboxylic acid with a fatty acid anhydride.

3. The metal-coated resin molded article as set forth in claim 1, wherein said
25 liquid-crystalline polyester is the reaction product obtained by performing the ester-exchange and polycondensation reaction in the presence of an imidazole compound represented by the following chemical formula:



wherein, each of "R₁" to "R₄" is selected from hydrogen atom, alkyl group having a carbon number of 1 to 4, hydroxymethyl group, cyano group, cyanoalkyl group having a carbon number of 1 to 4, cyanoalkoxy group having a carbon number of 1 to 4, carboxyl group, amino group, aminoalkyl group having a carbon number of 1 to 4, aminoalkoxy group having a carbon number of 1 to 4, phenyl group, benzyl group, phenylpropyl group, and a formyl group.

4. The metal-coated resin molded article as set forth in claim 1, wherein said epoxy-group containing ethylene copolymer contains 80 to 95 wt% of the ethylene unit and 5 to 15 wt% of at least one of the unsaturated carboxylic acid glycidyl ester unit and the unsaturated glycidyl ether unit in the molecule thereof.

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5. The metal-coated resin molded article as set forth in claim 1, wherein said resin composition contains a fiber-like inorganic filler having a diameter of 6 to 15 μm and an aspect ratio of 5 to 50.

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6. The metal-coated resin molded article as set forth in claim 1, wherein said resin composition contains 20 to 235 parts by weight of a whisker with respect to 100 parts by weight of said liquid-crystalline polyester.

7. The metal-coated resin molded article as set forth in claim 1, wherein said resin composition contains 10 to 40 parts by weight of a plate-like inorganic
5 filler with respect to 100 parts by weight of said liquid-crystalline polyester.

8. The metal-coated resin molded article as set forth in claim 1, wherein said metal layer is made of a metal material selected from the group essentially
10 consisting of copper, nickel, gold, aluminum, titanium, molybdenum, chromium, tungsten, tin, lead, brass, Nichrome and an alloy thereof.

9. The metal-coated resin molded article as set forth in claim 1, wherein said
15 metal layer is formed in a circuit pattern.

10. A method of producing a metal-coated resin molded article comprising the steps of

20 molding a resin composition to obtain a substrate; and
forming a metal layer on a surface of said substrate,

wherein said resin composition comprises a liquid-crystalline polyester and an epoxy-group containing ethylene copolymer, said epoxy-group containing ethylene copolymer contains 50 to 99.9 wt% of an ethylene unit and 0.1 to 30
25 wt% of at least one of an unsaturated carboxylic acid glycidyl ester unit and an unsaturated glycidyl ether unit in the molecule thereof, and a content of said epoxy-group containing ethylene copolymer is in a range of 0.1 to 25 parts by weight with respect to 100 parts by weight of said liquid-crystalline polyester.

11. The method as set forth in claim 10 comprising the step of performing a plasma treatment to the surface of said substrate prior to the formation of said metal layer.

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12. The method as set forth in claim 10, wherein said metal layer is formed by physical vapor deposition.

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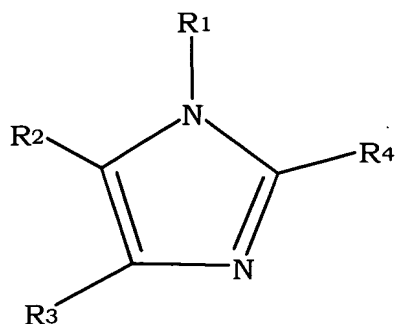
13. The method as set forth in claim 10 comprising the step of performing a heat treatment to said substrate at a temperature between a lower limit temperature calculated by subtracting 120°C from a flow-beginning temperature of said liquid-crystalline polyester, and an upper limit temperature calculated by subtracting 20°C from the flow-beginning temperature.

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14. The method as set forth in claim 10, wherein said liquid-crystalline polyester is prepared by an ester-exchange and polycondensation reaction of at least one of an aromatic dicarboxylic acid and an aromatic hydroxycarboxylic acid, with
20 an acylated compound obtained by acylating a phenolic hydroxyl group of at least one of an aromatic diol and an aromatic hydroxycarboxylic acid with a fatty acid anhydride.

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15. The method as set forth in claim 14, wherein the ester-exchange and polycondensation reaction is performed in the presence of an imidazole compound represented by the following chemical formula:



wherein, each of "R₁" to "R₄" is selected from hydrogen atom, alkyl group having a carbon number of 1 to 4, hydroxymethyl group, cyano group, cyanoalkyl group having a carbon number of 1 to 4, cyanoalkoxy group having a carbon number of 1 to 4, carboxyl group, amino group, aminoalkyl group having a carbon number of 1 to 4, aminoalkoxy group having a carbon number of 1 to 4, phenyl group, benzyl group, phenylpropyl group, and a formyl group.

- 10 16. The method as set forth in claim 10 comprising the step of forming a circuit pattern in said metal layer by laser patterning.